

**Information Update****Guidelines For Estimating
ALFALFA HAY
Cost of Production**

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This guide is designed to provide planning information and a format for calculating the costs of production in a forage enterprise. The production costs included in this budget are not obtained from a survey, nor do they represent the average cost of production for alfalfa hay in the Province.

The assumptions on which the costs were calculated are clearly defined in the supporting pages. They were developed by using a combination of recommended practices and methods followed by many hay producers.

The budget can be useful for comparative purposes. Comparison of costs can be made with other farms; the farm over time; or comparing the plan with results.

When interpreting these costs for an individual situation, adjustments may be required. Each assumption must be examined and adjustments made where necessary.

ALFALFA HAY COST OF PRODUCTION - PER HECTARE

A. OPERATING COSTS	Seeding Costs/ Hectare	Hay Production Costs		Your Farm
		/Hectare	/Tonne	
1.01 Seed (Seeding Year)	\$ 25.95	\$ 0.00	\$ 0.00	_____
1.02 Fertilizer	72.25	60.69	11.38	_____
1.03 Herbicides (Seeding Year)	0.00	0.00	0.00	_____
1.04 Machinery	40.65	24.19	4.53	_____
1.05 Crop Insurance	14.83	9.74	1.83	_____
1.06 Overhead	<u>0.00</u>	<u>12.36</u>	<u>2.32</u>	_____
Subtotal Operating Costs	153.68	106.98	19.66	_____
1.07 Interest on Operating Costs	<u>6.77</u>	<u>4.71</u>	<u>0.88</u>	_____
TOTAL OPERATING COSTS	\$160.45	\$111.69	\$ 20.94	_____
B. FIXED COSTS				
2. Investment				
2.01 Land Investment	\$ 0.00	\$ 43.51	\$ 8.16	_____
2.01 Machinery Investment	10.18	6.53	1.22	_____
3. Depreciation				
3.01 Machinery Depreciation	28.28	18.13	3.40	_____
4. Establishment Cost				
4.01 Allocation Per Year *	<u>0.00</u>	<u>37.84</u>	<u>6.82</u>	_____
TOTAL FIXED COSTS	\$ 38.46	\$106.01	\$ 19.60	_____
C. LABOUR	<u>19.34</u>	<u>29.00</u>	<u>5.44</u>	_____
TOTAL COST OF PRODUCTION	\$218.25	\$245.24	\$ 45.98	_____

* Total seeding cost amount allocated equally (average) per year.

ALLOCATION OF SEEDING COSTS IN EQUAL AMOUNTS PER YEAR

Average Cost - Operating costs only	\$160.45	\$26.74	_____
Average Cost - Total Costs	\$218.25	\$36.38	_____

ALFALFA HAY COST OF PRODUCTION - PER ACRE

A. OPERATING COSTS	Seeding Costs Per Acre	Hay Production Costs		Your Farm
		Per Acre	Per Ton	
1.01 Seed (Seeding Year)	\$ 10.50	\$ 0.00	\$ 0.00	_____
1.02 Fertilizer	29.24	24.56	10.32	_____
1.03 Herbicides (Seeding Year)	0.00	0.00	0.00	_____
1.04 Machinery	16.45	9.82	4.11	_____
1.05 Crop Insurance	6.00	3.94	1.66	_____
1.06 Overhead	<u>0.00</u>	<u>5.00</u>	<u>2.10</u>	_____
Subtotal Operating Costs	62.19	43.32	18.19	_____
1.07 Interest on Operating Costs	<u>2.80</u>	<u>1.95</u>	<u>0.82</u>	_____
TOTAL OPERATING COSTS	\$ 64.99	\$ 45.27	\$ 19.01	_____
B. FIXED COSTS				
2. Investment				
2.01 Land Investment	\$ 0.00	\$ 18.00	\$ 7.56	_____
2.01 Machinery Investment	4.21	2.70	1.13	_____
3. Depreciation				
3.01 Machinery Depreciation	11.70	7.50	3.15	_____
4. Establishment Cost				
4.01 Allocation Per Year *	<u>0.00</u>	<u>14.82</u>	<u>6.23</u>	_____
TOTAL FIXED COSTS	\$ 15.91	\$ 43.02	\$ 18.07	_____
C. LABOUR	<u>8.00</u>	<u>12.00</u>	<u>5.04</u>	_____
TOTAL COST OF PRODUCTION	\$ 88.90	\$100.26	\$ 42.12	_____

* Total seeding cost amount allocated equally (average) per year.

ALLOCATION OF SEEDING COSTS IN EQUAL AMOUNTS PER YEAR

Average Cost - Operating costs only	\$64.99	\$10.83	_____
Average Cost - Total Costs	\$88.90	\$14.82	_____

ASSUMPTIONS

1. This budget outlines the cost for alfalfa hay production in a six-year rotation.
2. If a nurse crop is used, oats is recommended. It would be harvested as a forage crop. It would yield approximately 1.3 tons per acre. Nitrogen would be applied at the recommended rate.
3. Alfalfa Certified seed is used in the budget.
4. Recommended fertilizer formulations and rates are used.
5. Machinery operating expenses include fuel, repairs, maintenance and twine.
6. Crop Insurance is based on Risk Area #15.
7. Overhead expenses include hydro, telephone, accounting, supplies, etc.
8. Land value is based on fair market values in Risk Area #15.
9. Machinery investment: seeding costs includes only seeding and tillage equipment; producing includes only haying equipment.
10. Labour is derived from agricultural engineering research data; hourly rates are derived from industrial wage rates.
11. Budget considers all costs including harvesting and hauling hay to the farm yard; storage cost is **not** taken into consideration.

Projected Average Yield Per Year

Year	Yields/Tons/Acre
1	1.00
2	2.40
3	2.90
4	2.90
5	2.70
6	2.40
Total	14.30
Average of the 6 years	2.38

Please Note: Amount seeded each year = 100 acres
 Projected acres in hay production = 600 acres

WORKSHEET: SEEDING COSTS CALCULATIONS**A. OPERATING COSTS****Your Farm****1.01 Seed**

Alfalfa	6 lbs/acre	
(including inoculant)	x \$ 1.75 /lb	
	= \$ 10.50 /acre	

Grass	0 lbs/acre	
	x \$ 0.00 /lb	
	= \$ 0.00 /acre	

Oats	0 lbs/acre	
(nurse crop)	x \$ 0.00 /lb	
	= \$ 0.00 /acre	

Total Seed	\$ 10.50 alfalfa	
	+ 0.00 grass	
	+ 0.00 oats	
	= \$ 10.50 /acre	

1.02 Fertilizer

Nitrogen	0 lbs/acre	
	x \$ 0.00 /lb	
	= \$ 0.00 /acre	

Phosphate	64 lbs/acre	
	x \$ 0.26 /lb	
	= \$ 16.64 /acre	

Potash	50 lbs/acre	
	x \$ 0.12 /lb	
	= \$ 6.00 /acre	

Sulfur	30 lbs/acre	
	x \$ 0.22 /lb	
	= \$ 6.60 /acre	

Total Fertilizer	\$ 0.00 nitrogen	
	+ 16.64 phosphate	
	+ 6.00 potash	
	+ 6.60 sulfur	
	= \$ 29.24 /acre	

1.03 Herbicide**Your Farm**

(Note: Herbicides are used only under very weedy conditions)

$$= \$ 0.00 \text{ /acre}$$

1.04 Machinery

$$\text{Fuel} \quad \$ 9.20 \text{ /acre}$$

$$\text{Repairs \& Maintenance} \quad \underline{7.25 \text{ /acre}}$$

$$\text{Total} \quad = \$ 16.45 \text{ /acre}$$

1.05 Crop Insurance

$$\begin{array}{r} \$ 80.00 \text{ coverage/acre} \\ \times \quad 0.0750 \text{ premium/\$100} \\ \hline = \$ 6.00 \text{ /acre} \end{array}$$

1.06 Overhead

$$= \$ 0.00 \text{ /acre}$$

$$\text{Sub-Total Operating Costs} \quad = \$ 62.19 \text{ /acre}$$

1.07 Interest on Operating

(Operating interest is charged on one-half the sub-total operating costs)

$$\begin{array}{r} \$ 62.19 \text{ sub-total operating costs} \\ \div \quad 2 \\ \hline = \$ 31.10 \\ \times \quad 9.00 \% \text{ operating interest rate} \\ \hline = \$ 2.80 \text{ /acre} \end{array}$$

Total Operating Costs:

$$\begin{array}{r} \$ 62.19 \text{ sub-total operating} \\ + \quad 2.80 \text{ interest on operating} \\ \hline = \$ 64.99 \text{ /acre} \end{array}$$

Your Farm**B. FIXED COSTS****2. Investment**

Investment Cost Formula:

$$\frac{\text{OriginalCost} + \text{SalvageValue}}{2} \times \text{InvestmentRate}$$

2.01 Land (No land investment; it is included in Production)**2.02 Machinery**

	\$117.00	original cost/acre	_____
+	23.40	salvage value	_____
=	\$140.40		_____
÷	2		_____
x	6.00	% investment interest rate	_____
=	\$ 4.21	/acre	_____

3. Depreciation

Depreciation Formula:

$$\frac{\text{OriginalCost} - \text{SalvageValue}}{\text{UsefulLife}}$$

3.01 Machinery

	\$117.00	original cost/acre	_____
-	23.40	salvage value	_____
=	\$ 93.60		_____
÷	8	years of useful life	_____
=	\$ 11.70	/acre	_____

C. LABOUR COST

	1	hour/acre	_____
x	\$ 8.00	/hour	_____
=	\$ 8.00	/acre	_____

WORKSHEET: PRODUCING COSTS

A. OPERATING COSTS

Your Farm

1.02 Fertilizer

Nitrogen

0 lbs/acre

$$\begin{array}{r} \times \quad \$ 0.00 \text{ /lb} \\ = \quad \$ 0.00 \text{ /acre} \end{array}$$

Phosphate

46 lbs/acre

$$\begin{array}{r} \times \quad \$ 0.26 \text{ /lb} \\ = \quad \$ 11.96 \text{ /acre} \end{array}$$

Potash

50 lbs/acre

$$\begin{array}{r} \times \quad \$ 0.12 \text{ /lb} \\ = \quad \$ 6.00 \text{ /acre} \end{array}$$

Sulfur

30 lbs/acre

$$\begin{array}{r} \times \quad \$ 0.22 \text{ /lb} \\ = \quad \$ 6.60 \text{ /acre} \end{array}$$

Total Fertilizer

$$\begin{array}{r} \$ 0.00 \text{ nitrogen} \\ + \quad 11.96 \text{ phosphate} \\ + \quad 6.00 \text{ potash} \\ + \quad 6.60 \text{ sulfur} \\ = \quad \$ 24.56 \text{ /acre} \end{array}$$

1.03 Machinery

Fuel

\$ 4.00 /acre

Repairs & Maintenance

\$ 4.00 /acre

Twine

\$ 0.45 /1200 lb bale

$$\begin{array}{r} \times \quad 4.05 \text{ bales/acre} \\ = \quad \$ 1.82 \text{ /acre} \end{array}$$

Total Machinery

$$\begin{array}{r} \$ 4.00 \text{ fuel} \\ + \quad 4.00 \text{ repairs \& maintenance} \\ + \quad 1.82 \text{ twine} \\ = \quad \$ 9.82 \text{ /acre} \end{array}$$

1.05 Crop Insurance

$$\begin{array}{rcl}
 & \$ 40.00 & \text{coverage value} \\
 \times & 0.0986 & \text{premium} \\
 \hline
 = & \$ 3.94 & \text{/acre}
 \end{array}$$

Your Farm**1.06 Overhead**

$$= \$ 5.00 \text{ /acre}$$

Sub-Total Operating Costs

$$= \$ 43.32 \text{ /acre}$$

1.07 Interest on Operating

(Operating interest is charged on one-half the sub-total operating costs)

$$\begin{array}{rcl}
 & \$ 43.32 & \text{sub-total operating costs} \\
 \div & 2 & \\
 \hline
 = & \$ 21.66 & \\
 \times & 9.00 & \% \text{ operating interest rate} \\
 \hline
 = & \$ 1.95 & \text{/acre}
 \end{array}$$

Total Operating Costs:

$$\begin{array}{rcl}
 & \$ 43.32 & \text{sub-total operating costs} \\
 + & 1.95 & \text{interest on operating costs} \\
 \hline
 = & \$ 45.27 & \text{acre}
 \end{array}$$

B. FIXED COSTS**2. Investment**

Investment Cost Formula:

$$\frac{\text{OriginalCost} + \text{SalvageValue}}{2} \times \text{InvestmentRate}$$

2.01 Land

$$\begin{array}{rcl}
 & \$300.00 & \text{/acre} \\
 \times & 6.00 & \% \text{ investment interest rate} \\
 \hline
 = & \$ 18.00 & \text{/acre}
 \end{array}$$

2.02 Machinery**Your Farm**

$$\begin{array}{rcl}
 & \$ 75.00 & \text{original cost/acre} \\
 - & 15.00 & \text{salvage value} \\
 \hline
 = & \$ 90.00 & \\
 \div & 2 & \\
 \hline
 \times & 6.00 & \% \text{ investment interest rate} \\
 \hline
 = & \$ 2.70 & \text{/acre}
 \end{array}$$

3. Depreciation

Depreciation Formula:

$$\frac{\text{Original Cost} - \text{Salvage Value}}{\text{Useful Life}}$$

3.01 Machinery

$$\begin{array}{rcl}
 & \$ 75.00 & \text{original cost/acre} \\
 - & 15.00 & \text{salvage value} \\
 \hline
 = & \$ 60.00 & \\
 \div & 8 & \text{years of useful life} \\
 \hline
 = & \$ 7.50 & \text{/acre}
 \end{array}$$

C. LABOUR COST

$$\begin{array}{rcl}
 & 1.5 & \text{hours/acre} \\
 \times & \$ 8.00 & \text{/hour} \\
 \hline
 = & \$ 12.00 & \text{/acre}
 \end{array}$$

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FOR FURTHER INFORMATION CONTACT YOUR LOCAL AGRICULTURAL OFFICE.

